



Year: 2015

Postcoital Dysphoria: Prevalence and Psychological Correlates

Schweitzer, Robert D ; O'Brien, Jessica ; Burri, Andrea

Abstract: Introduction: While problems related to desire, arousal, and orgasm have been subject to extensive epidemiologic research, women's postcoital reactions and feelings, and postcoital dysphoria (PCD) remains under-researched. Aim: The study examined the association between women's attachment anxiety and avoidance, differentiation of self, and the experience of PCD symptoms. Methods: Two hundred and thirty female university students completed an online survey. Main Outcome Measures: The Female Sexual Function Index, the Experiences in Close Relationships Scale, the Differentiation of Self Inventory-Revised, and study specific questions. Results: Forty-six percent of respondents reported experiencing PCD symptoms at least once in their lifetime with 5.1% experiencing PCD symptoms a few times within the past 4 weeks. A small but significant inverse correlation was found between lifetime prevalence of PCD and sexual functioning ($r = -0.16$). While the regression model accounted for 22% of variance in lifetime prevalence of PCD, attachment and differentiation of self variables did not account for significant variance. Conclusions: The findings confirm that PCD is under-recognized and under-researched. There appears to be no relationship between PCD and intimacy in close relationships. Further research is necessary to understand the subjective experience of PCD and to inform the development of a reliable measure.

DOI: <https://doi.org/10.1002/sm2.74>

Posted at the Zurich Open Repository and Archive, University of Zurich

ZORA URL: <https://doi.org/10.5167/uzh-116507>

Journal Article

Published Version



The following work is licensed under a Creative Commons: Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

Originally published at:

Schweitzer, Robert D; O'Brien, Jessica; Burri, Andrea (2015). Postcoital Dysphoria: Prevalence and Psychological Correlates. *Sexual Medicine*, 3(4):235-243.

DOI: <https://doi.org/10.1002/sm2.74>

Postcoital Dysphoria: Prevalence and Psychological Correlates

Robert D Schweitzer, PhD,* Jessica O'Brien, MA (Clin Psy.),* and Andrea Burri, PhD†

*School of Psychology and Counselling, Queensland University of Technology, Kelvin Grove, Queensland, Australia;

†Department of Psychology, University of Zurich, Zurich, Switzerland

DOI: 10.1002/sm2.74

ABSTRACT

Introduction. While problems related to desire, arousal, and orgasm have been subject to extensive epidemiologic research, women's postcoital reactions and feelings, and postcoital dysphoria (PCD) remains under-researched.

Aim. The study examined the association between women's attachment anxiety and avoidance, differentiation of self, and the experience of PCD symptoms.

Methods. Two hundred and thirty female university students completed an online survey.

Main Outcome Measures. The Female Sexual Function Index, the Experiences in Close Relationships Scale, the Differentiation of Self Inventory-Revised, and study specific questions.

Results. Forty-six percent of respondents reported experiencing PCD symptoms at least once in their lifetime with 5.1% experiencing PCD symptoms a few times within the past 4 weeks. A small but significant inverse correlation was found between lifetime prevalence of PCD and sexual functioning ($r = -0.16$). While the regression model accounted for 22% of variance in lifetime prevalence of PCD, attachment and differentiation of self variables did not account for significant variance.

Conclusions. The findings confirm that PCD is under-recognized and under-researched. There appears to be no relationship between PCD and intimacy in close relationships. Further research is necessary to understand the subjective experience of PCD and to inform the development of a reliable measure. **Schweitzer RD, O'Brien J, and Burri A. Postcoital dysphoria: Prevalence and psychological correlates. Sex Med **,**:**-**.**

Key Words. Postcoital Dysphoria; Sexual Problems; FSD; Attachment; Anxiety; Differentiation of Self

Introduction

The umbrella term of female sexual dysfunctions (FSDs) primarily relates to desire, arousal, orgasm, and pain and, as such, describes feelings and functions occurring prior to or during sexual activities [1]. Little attention has been given to physiological or emotional expressions and disturbances occurring post-coitally [2]. A very limited number of recent studies have drawn attention to a previously poorly recognized phenomenon known as postcoital dysphoria (PCD),

or "post-sex blues" [3]. PCD is the experience of negative affect characterized by tearfulness, a sense of melancholy or depression, anxiety, agitation, or aggression following sexual intercourse [4].

Research on the occurrence of PCD symptoms is severely lacking. Bird et al. [2] reported that 32.9% of the women in their sample had experienced PCD symptoms in their lifetime. A study by Burri and Spector [4] investigated the experience of post-coital psychological symptoms such as irritability and motiveless crying after sexual intercourse and/or orgasm in a sample of 1,489 female

twins in the United Kingdom. They reported 7.7% of women reported experiencing these symptoms persistently and 3.7% of women reported recent experience of these symptoms. The underlying causes of PCD remain unknown, although it is speculated that the etiology is multifactorial, with psychological and affective factors accounting for a large proportion of PCD expression. The genesis of PCD symptoms may be understood within a broader nonlinear model of female sexual functioning provided by Basson [5]. The model incorporates emotional intimacy, sexual stimuli, and relationship satisfaction. Basson [5] suggested that, for most women, their motivation to engage in sexual activity stems from desire to enhance intimacy with their partner [6–9] as well as to experience physical pleasure [5]. Therefore, according to Basson [5] there are two primary goals of sex: to enhance intimacy with one's partner and achieve sexual satisfaction.

In seeking to gain a better understanding of the postcoital experience in women, it is crucial to gain further understanding on how and to what extent women's sexual motivation and therefore functioning are influenced by the need to develop, maintain, or enhance intimacy with one's partner. Two components of intimacy relate to the role of attachment and to differentiation of self, in women's sexual functioning [4,10]. Attachment and differentiation of self are postulated to dictate how women manage intimacy in significant relationships [11]. Differentiation of self relates to one's ability to balance intimacy and autonomy in relationships, as well as the ability to separate emotions from rational thinking [12]. Each of these constructs may be expressed intra-personally and inter-personally. Burri and colleagues [10], for example, found the relational variables of attachment avoidance and, to a lesser degree, attachment anxiety to be associated with FSD, with the inability to maintain a sense of self in the presence of intimate others being the strongest predictors of sexual problems [10]. Similarly, attachment avoidance and insecurity, and fear of loss of sense of self may contribute to PCD.

Aims

The first objective of this study was to assess the prevalence of PCD in a sample of female university students and to determine whether PCD is related to overall sexual functioning. We hypothesized that lifelong PCD would be fairly common and related to respondents' overall sexual func-

tioning. The second objective of the study was to identify potential relational factors associated with PCD by examining the association between respondents' attachment anxiety and avoidance, and the degree of differentiation of self, and the experience of PCD symptoms. Here, we hypothesized that respondents with higher degrees of attachment avoidance and anxiety and with lower levels of differentiation would show more PCD.

Methods

Study Sample

Study data were collected using a cross-sectional online questionnaire. A convenience sample of female students was recruited by an advertisement that was circulated via e-mail at Australian universities and on Facebook. To be included in the study, women had to be over the age of 18 and have reported being sexually active. Data collection was conducted over approximately 6 months from May to November, 2012. Compensation was not provided to participants. Of the $n = 300$ women who began the questionnaire, only $n = 231$ completed it resulting in a completion rate of 77%. Furthermore, previous research has reported significant differences in the prevalence of sexual difficulties between women in same-sex relationships and women in opposite-sex relationships [13]. Therefore, individuals identifying as bi- or homosexual were excluded from correlation and regression analyses (resulting in a total sample of $n = 195$).

Procedure

The questionnaire was constructed using online survey software, Key Survey, and data were hosted by a secure University-based server. Participants were notified that their consent to participate would be inferred by their decision to click the "Next" button. No identifying information was obtained. Ethics approval was obtained from the University Human Research Ethics Committee (Approval Number 1100001497).

Main Outcome Measures

Demographic and background information such as age, level of education, sexual orientation, current relationship status, relationship duration, and number of children was collected using study-specific, self-constructed questions.

The Female Sexual Function Index (FSFI) [14] was used to assess female sexual functioning. The

FSFI consists of 19 items tapping into the six domains of desire, arousal, lubrication, orgasm, pain, and sexual satisfaction. Responses were recorded on a Likert-type rating scale, which included an option to indicate that no sexual activity was attempted. The total FSFI score is indicative of overall sexual functioning with lower scores indicating lower sexual functioning.

Two additional items that address the lifetime and 4-week prevalence of PCD were included following the FSFI. These items were adapted from Bird et al.'s study [2]. Items were: "Have there been any times in your life where inexplicable tearfulness or sadness following consensual sexual intercourse was a problem for you?" and "Have there been any times in the past four weeks where inexplicable tearfulness or sadness following consensual sexual intercourse was a problem for you?" Responses were coded similarly to the FSFI.

The short form of the Experiences in Close Relationships Scale (ECR-SF) [15,16] is a 12-item self-report measure of adult attachment. The scale is composed of two dimensions: attachment anxiety and attachment avoidance. The anxiety subscale reflects fear of abandonment and the intense desire to merge with the other. The avoidance subscale reflects discomfort with intimacy in close relationships. Responses to all items were recorded on a 7-point Likert-type rating scale that ranges from "1 = Disagree strongly" to "7 = Agree strongly." Across six studies, Wei et al. [16] found internal reliability coefficients ranging from 0.77 to 0.86 and for the anxiety subscale from 0.78 to 0.88.

The Differentiation of Self Inventory-Revised (DSI-R) [17,18] is a measure of the degree to which an individual is able to balance autonomy and intimacy in close relationships, as well as the ability to balance rational and emotional reasoning. The inventory contains 46 items and yields four subscale scores as well as an overall score. The four subscales include emotional reactivity (i.e., tendency to respond too emotionally to one's environment), "I" position (i.e., the ability to maintain a clearly defined sense of self), emotional cutoff (i.e., fear of intimacy), and fusion with others (i.e., the tendency to be over-involved in significant relationships). Responses to all items were coded on a 6-point Likert-type scale ranging from "1 = Not very true of me" to "6 = Very true of me" [17]. Subscale scores were then summed to provide a total score. Higher scores indicate greater differentiation, whereas lower scores indicate poor differentiation. Skowron and Schmitt [18] found adequate internal

reliability for the full scale and each subscale: DSI-R = 0.92, emotional reactivity = 0.89, "I" position = 0.81, emotional cutoff = 0.82, and fusion with others = 0.85.

Psychological Distress

The K6 [19] was used to screen for mental illness among participants. The K6 consists of six items that assess cognitive, behavioral, emotional, and physical symptoms of mood and anxiety disorders. Responses were coded on a 5-point Likert-type scale ranging from "1 = None of the time" to "5 = All of the time." Cronbach's α of 0.89 has been found previously for the K6 [19].

To control for the association between sexual functioning and sexual abuse (e.g., Ref. 20), two items adapted from Bird et al. [2] were included to identify individuals with a history of sexual abuse. Responses were coded as either "Yes" or "No."

Statistical Analysis

Data handling and all statistical analyses were carried out using SPSS and Predictive Analysis Software (PASW) Statistics Version 17.0 for PC (SPSS Inc., Chicago, IL, USA). For all analyses, a *P* value less than 0.05 was considered statistically significant. Assumptions of normality were assessed with the Kolmogorov-Smirnov test. Internal reliability of each scale was calculated using Cronbach's α . All scales were found to have good internal reliability; however, both PCD items and the attachment avoidance subscale of the ECR-SF were found to be skewed and were subsequently transformed using a logarithmic transformation.

Sample characteristics and variables of interest were reported on the basis of means and standard deviations or numbers and percentages, as appropriate. To investigate the relationship between the variables, a set of correlation and regression analyses were used, including Spearman correlation (ρ) between categorical and continuous variables [21], Pearson correlation (*r*), and linear regression for continuous variables.

Two hierarchical multiple regression analyses were conducted to assess whether attachment anxiety, attachment avoidance, and differentiation of self predict prevalence of PCD symptoms. The data were analyzed using the Predictive Analysis Software (PASW) Statistics Version 17.0 for PC. Since only a small percentage (5.1%) of women indicated that they experienced PCD symptoms within the past 4 weeks, only lifetime prevalence of PCD symptoms was used in multiple regression

analyses. Also, differentiation of self, attachment, as well as previous experience of abuse represent more enduring factors, and it is therefore reasonable to investigate their association with lifelong PCD symptoms as opposed to short-term symptoms, where other factors might contribute to symptom expression. As a precaution, history of sexual abuse and psychological distress were entered into the first block of the hierarchical multiple regression models as confounders. Although age was not correlated with lifetime prevalence of PCD symptoms, it was possible that age remained a potential confound due to its previously demonstrated association with sexual difficulties [4]. As a check, the multiple regression analyses were run with and without age included at block 1. The inclusion of age did not significantly affect the output and therefore was left out of the analysis. FSFI was entered in the first block; the two primary predictors of attachment and differentiation of self were entered in two separate blocks. As differentiation of self has a broader theoretical scope than attachment, it was entered in the final block within the following multiple regression analyses to determine whether it accounted for more variance than attachment.

Results

A breakdown of the sample demographics is provided in Table 1. The mean age of women was 25.9 (SD 8.15). Key differences were noted between the heterosexual and the non-heterosexual group, particularly in the association between a history of sexual abuse, either as a child or an adult, and the experience of PCD, both across the lifetime and within the past 4 weeks. Therefore, individuals identifying as bi- or homosexual were excluded from correlation and regression analyses (resulting in a total sample of $n = 195$). Table 2 shows the descriptive statistics and the internal reliability of each scale used to assess sexuality-related and psychological variables of interest.

Prevalence of PCD and Correlation with Psychological and Sexuality-Related Variables

Table 3 presents the prevalence of PCD symptoms in the sample. Symptoms of PCD in the past 4 weeks were reported by around 5% of women, whereas lifetime PCD symptoms were more common, being reported by 46.2% of women (figures relating to a “few times” to “almost always or always”). Only 2% of women reported experiencing symptoms of PCD “always” or “most of the time.”

Table 1 Demographics and background information of the overall sample ($n = 230$)

Variable	<i>M</i>	<i>SD</i>	Range
Age in years	25.88	8.15	18–55
			Percentage (%)
Ethnic background			
Caucasian			90.9
Asian			5.7
Middle Eastern			0.4
Aboriginal or Torres Strait Islander			0.4
Other			2.6
Country of residence			
Australia			95.2
Other			3.5
Did not respond			1.3
Highest level of education			
High school			30.4
Tertiary qualification			53.0
Post graduate qualification			16.5
Sexual orientation			
Heterosexual			84.8
Homosexual			2.2
Bisexual			13
Relationship status			
Single			15.7
Dating			32.6
Living together			33.9
Married			17.4
Divorced			0.4
Relationship length			
Not currently in a relationship			17.0
Less than 3 months			4.3
Less than 6 months			4.3
Less than 1 year			8.7
Less than 2 years			14.8
Less than 5 years			24.8
Greater than 5 years			26.1
Children			
None			87.0
1+			13.0
Experienced childhood sexual abuse			20.4
Experienced adult sexual abuse			20.4

To determine which variables needed to be included in the regression model, analysis of correlations between all key variables was conducted (see Table 4). There was a weak albeit statistically significant correlation ($r = -0.16$, $P = 0.02$) between the total FSFI score and lifetime prevalence of PCD (but not recent PCD) symptoms, suggesting that sexual difficulties are mildly associated with higher incidence of lifetime PCD symptoms.

Age and relationship duration was not correlated with female sexual functioning or PCD symptoms. Sexual abuse as a child and an adult positively correlated with PCD symptoms ($r = .23$, $P < 0.01$ for childhood and $r = 0.15$, $P < 0.05$ for adulthood abuse). Only sexual abuse as an adult was associated with FSFI such that those who

Table 2 Descriptive statistics and internal reliability of sexuality-related and psychological variables (n = 195)

Variable	Mean (SD)	Score range	Skewness	Cronbach's α
PCD 4 weeks	—	—	2.27	—
PCD lifetime	—	—	1.44	—
Total FSFI	23.28 (5.11)	2.80–32.00	–1.35	0.91
ECR-SF				
Anxiety	21.00 (7.54)	8.00–42.00	0.56	0.81
Avoidance	13.33 (6.70)	6.00–37.00	1.10	0.85
DSI-R				
Emotional reactivity	3.21 (1.01)	1.00–5.64	0.02	0.89
I position	4.01 (0.80)	1.73–5.82	–0.36	0.82
Emotional cut-off	4.58 (0.91)	2.00–6.00	–0.55	0.86
Fusion	3.39 (0.80)	1.50–5.67	0.27	0.77
K6	6.45 (4.30)	0.00–21.00	0.95	0.85

experienced abuse were more likely to report overall sexual difficulties. Psychological distress as measured by the K6 was associated with both sexual functioning ($r = 0.25$, $P < 0.01$) and PCD ($r = 0.33$ and $r = 0.16$, respectively). Table 4 also shows significant correlations between the predictors. This was expected given that they are similar constructs.

Hierarchical Multiple Regression Analyses

Table 5 contains the statistics for the hierarchical regression model with PCD symptoms as the criterion. The overall model was significant and accounted for 22% of the variance. At block 1, all predictors accounted for approximately 17% of the variance, with childhood sexual abuse accounting for 4% of unique variance, $\beta = 0.20$, $t = 3.04$, $P = 0.003$, $sr^2 = 0.04$. At block 2, there was a non-significant increase in accounted variance with the addition of attachment anxiety and attachment avoidance into the model. None of the factors, however, contributed significantly to the overall accounted variance. At block 3, an additional 4% of variance was accounted for, with a statistically significant effect of emotional reac-

tivity, accounting for approximately 2% unique variance in the final model. Overall, there was 16% shared variance.

Discussion

Overall, women's experience of the resolution phase, and PCD, in particular, remains under-recognized and under-researched. The present study reports occurrence of lifelong and current PCD symptoms and is, to the best of our knowledge, the first to investigate attachment and differentiation of self as potential risk factors in the etiology of PCD.

Approximately 46.2% of the current sample reported that they had experienced PCD symptoms at least once in their lifetime. In regards to the past 4 weeks, 5.1% of the sample reported experiencing PCD symptoms. Although the rates are somewhat comparable with the estimates reported by Bird and colleagues (32.9% at least once in their lifetime and 9.5% within the past 4 weeks) [2], they are much higher than those found in Burri and Spector's study (3.7% in the past 4 weeks and 7.7% lifetime) [4]. Dissimilar assessment methods, as well as differing sample characteristics (i.e., mean age) might be the reason for these huge discrepancies in prevalence rates. Nevertheless, these and Bird's [2] relatively high rates highlight the crucial need for further research into PCD and post-coital phase, particularly for women.

The study further examined PCD by investigating whether women's experience of PCD symptoms was related to their self-reported overall sexual functioning. Based on previous research [2], it was hypothesized that PCD symptoms would mildly correlate with overall sexual functioning. This hypothesis was partially supported as a weak

Table 3 Prevalence of postcoital dysphoria (PCD) (n = 195)

Frequency of PCD after intercourse	Percentage (%) of sample experiencing PCD	
	Over 4 weeks	Over lifetime
Did not attempt intercourse	7.2	—
Almost never or never	87.7	53.8
A few times (less than half)	3.1	37.9
Sometimes (about half the time)	1.5	6.2
Most times (more than half the time)	0.5	1.5
Almost always or always	0.0	0.5

Table 4 Correlation matrix of sexuality-related and psychological variables

Variable	Age	Relationship duration	Sexual abuse (C)	Sexual abuse (A)	K6	PCD life	PCD 4 weeks	FSFI	Attach avoid	Attach Anx	ER	IP	EC	FO
Age	—													
Relationship duration		—												
Sexual abuse (C)			—											
Sexual abuse (A)				—										
K6					—									
PCD life						—								
PCD 4 weeks							—							
FSFI								—						
Attach avoid									—					
Attach Anx										—				
ER											—			
IP												—		
EC													—	
FO														—

* $P < 0.05$, ** $P < 0.01$, *** $P \leq 0.001$.

Abbreviations: FSFI = Female Sexual Function Index, PCD = Post Coital Dysphoria, Differentiation of Self Inventory comprises four subscales: ER = Emotional Reactivity, IP = "I" Position, EC = Emotional Cutoff, FO = Fusion with Others subscale

link was found between lifelong PCD symptoms and overall sexual functioning. Contrary to Bird's study [2], however, no significant relationship could be detected between the experience of PCD in the past 4 weeks and overall sexual functioning. Insufficient power might provide an explanation for these findings, as only 5.1% of the sample reported experiencing PCD 4 weeks prior to completing the questionnaire. Alternatively, it could also mean that PCD symptoms might not necessarily be related to overall sexual functioning and could occur despite or following "normal" physiological functioning. This potential explanation provides further support to Burri and Spector's [4] supposition that the underlying cause of PCD symptoms may be due to multiple biopsychosocial factors. In their twin study, genetics were found to account for approximately 26–28% of variance in the experience of post-coital psychological symptoms such as irritability and motiveless crying [4]. While these results suggest there is a genetic component to post-coital psychological symptoms, a large proportion of variance remained unaccounted for. Burri and Spector [4] therefore proposed that factors such as relationship satisfaction and history of sexual abuse may be more predictive of post-coital symptoms. In accordance with this conclusion, a history of childhood sexual abuse appeared to be the most important predictor of PCD accounting for 5% unique variance in the present study. This finding is also consistent with Bird et al.'s [2] multiple regression analyses where history of childhood abuse explained approximately 4.1% of the unique variance [2]. The results are further in line with findings from Burri and Spector [4] who reported significant associations not only between sexual abuse and symptoms of PCD but also of physical and emotional abuse. Several possible explanations regarding these associations are feasible. Previous experience of abuse can lead to the development of emotional and/or psychological problems including anxiety about sexual contacts, which again might impact on women's long-term sexual functioning and behavior. It is further plausible that women with an abusive history may be more prone to enter relationships in which they do not always feel in control of their experience, or assertive about their wants/needs, and perhaps may be prone to resentment [4]. Accordingly, we also found a significant association between adulthood sexual abuse and attachment avoidance.

Other previously reported risk factors of sexual problems, such as age, were also investigated.

Table 5 Hierarchical multiple regression model with PCD lifetime as the criterion

	Predictors	R ²	R ² ch	Fch	df	β	sr ²
Block 1	–	0.17***	0.17	9.39	4, 190	–	–
	Childhood sexual abuse	–	–	–	–	0.22***	0.04
	Adult sexual abuse	–	–	–	–	0.07	0.01
	Psychological distress	–	–	–	–	0.12	0.01
	FSFI	–	–	–	–	–0.08	0.00
Block 2	–	0.18***	0.01	1.56	2, 188	–	–
	Attachment anxiety	–	–	–	–	–0.04	0.00
	Attachment avoidance	–	–	–	–	0.14	0.01
Block 3	–	0.22***	0.04	2.19	4, 184	–	–
	Emotional reactivity	–	–	–	–	–0.27*	0.02
	I position	–	–	–	–	–0.05	0.00
	Emotional cut-off	–	–	–	–	0.07	0.00
	Fusion	–	–	–	–	0.04	0.00

* $P < 0.05$, ** $P < 0.01$, *** $P \leq 0.001$

Although age is commonly seen as a predictor for sexual problems, evidence suggests that age cannot be regarded a global risk factor for impaired sexual functioning [22]. Although several studies have consistently reported a decrease in libido and subjective and genital arousal, other domains such as overall sexual satisfaction may even improve. Accordingly, we did not find any significant association between age and PCD or overall sexual functioning in our study.

Statistically significant, albeit small to moderate, correlations provided some evidence for an association between attachment, differentiation of self, and experience of PCD, with higher levels of attachment anxiety and attachment avoidance, greater emotional reactivity, and greater difficulty maintaining an “I” position being associated with the experience of PCD symptoms. When assessing the 4-week prevalence, however, only emotional reactivity, “I” position, and fusion with others were significantly correlated with PCD symptoms. Results could only partially be replicated in the hierarchical regression analyses. While attachment anxiety and attachment avoidance did not predict experience of PCD symptoms across lifetime, a significant contribution of emotional reactivity could be detected. As this is the first study to investigate differentiation of self and the experience of PCD symptoms, potential explanations of significant correlations are based solely on Bowen’s theoretical framework [12] and should be treated tentatively. According to Bowen [12], differentiation of self represents a critical determinant of well-being, as poor differentiation is thought to lead to psychological and physical distress. A number of studies have demonstrated the association between differentiation of self and psychologi-

cal distress and found that differentiation of self was highly predictive of self-reported life satisfaction [17,23]. There is little evidence available in the literature which assessed the relationship between differentiation of self and sexual functioning. This is intriguing as a large part of marital and sex therapy draws on Bowen theory as a foundation for its practice [24]. Schnarch [25], for example, argued that greater differentiation of self in intimate relationships leads to increased intimacy and greater sexual satisfaction by allowing for greater sexual communication without being overwhelmed by anxiety. Those with lower differentiation may be more anxious about “losing one’s self” or control during sexual intercourse, thus resulting in sexual problems. Schnarch [26] further argued that if partners can increase their differentiation by developing an intimate connection without fear of losing their sense of self, their relationship and sexual satisfaction will be enhanced.

In our study, individuals who have difficulty maintaining an “I” position and are more emotionally reactive were more likely to report symptoms of PCD. In the period following sexual intercourse, individuals who are emotionally reactive may be more sensitive or vulnerable to negative emotions, resulting in an acute period of depression or irritability. Those who have a tendency to become fused with others may perceive the resolution phase of sexual intercourse as a separation from their partner, which may be overwhelming. However, differentiation of self did not account for significant variance in the overall regression model which suggests that the explanation for PCD symptoms may lie elsewhere. Therefore, further exploration of PCD and the potential biopsychosocial risk factors is greatly needed.

Limitations

Several limitations are noted. First, this study utilized a non-clinical convenience sample of heterosexual and mostly Caucasian women attending university, thus restricting the generalizability of the study's findings. Studies using general populations are needed for greater generalizability of the findings to women. Additionally, the inclusion of non-heterosexual women is needed to contribute to greater external validity. Second, due to the lack of reliable and validated measures of PCD, the prevalence rates established in this study need to be treated with caution. To assist future research in sexual functioning, a reliable measure of the resolution phase with a particular focus on the psychological symptoms of PCD needs to be developed. Reference may also be made to a broader definition of PCD, as suggested by Sadock and Sadock [3], who included anxiety and agitation in their description of PCD. However, the question used to assess PCD occurrence in the present study is comparable with the one used by Bird and colleagues [2] and Burri and Spector [4]. Third, due to the retrospective nature of self-report measures, data can be inaccurate due to poor recall or socially desirable answers [27]. Finally, no information on clinical and sub-clinical depressive status of the women was available. Mental illness, including depressive symptoms, were, however, assessed with the K6 and taken into account in all analyses. Future research may extend upon the current study by taking into account the duration and quality of relationships.

Conclusions

Overall, our results support the notion that PCD symptoms are prevalent in the general population and that they can occur in spite of an otherwise physiologically functional sexual experience. Lifetime prevalence of PCD suggests that differentiation of self is a stronger predictor of PCD symptoms than attachment. The significant bivariate correlations warrant the need for further exploration of the concepts which could have clinical implications and may inform future prevention and educational strategies aiming at promoting sexual health.

Acknowledgment

AB reports an Ambizione personal career fellowship from the Swiss National Science Foundation.

Corresponding Author: Robert Schweitzer, PhD, School of Psychology and Counselling, Queensland

University of Technology, Victoria Park Road, Kelvin Grove, Qld 4059, Australia. Tel: +61 7 3870 9596; Fax: +61 7 3138 0486; E-mail: r.schweitzer@qut.edu.au

Conflict of Interest: The author(s) report no conflicts of interest.

References

- 1 Basson R, Berman J, Burnett A, Derogatis L, Ferguson D, Fourcroy J, Goldstein I, Graziottin A, Heiman J, Laan E, Leiblum S, Padma-Nathan H, Rosen R, Seagraves K, Seagraves RT, Shabsigh R, Sipski M, Wagner G, Whipple B. Report of the International Consensus Development Conference on female sexual dysfunction: Definitions and classification. *J Urol* 2000;163:888–93.
- 2 Bird B, Schweitzer R, Strassberg D. The prevalence and correlates of postcoital dysphoria in women. *Sex Health* 2011;23:14–25.
- 3 Sadock BJ, Sadock VA, Kaplan HI. Kaplan and Sadock's concise textbook of clinical psychiatry. 3rd edition. Philadelphia: Lippincott Williams & Wilkins; 2008.
- 4 Burri AV, Spector TD. An epidemiological survey of post-coital psychological symptoms in a UK population sample of female twins. *Twin Res Hum Genet* 2011;14:240–8.
- 5 Basson R. A model of women's sexual arousal. *J Sex Marital Ther* 2002;28:1–10.
- 6 Hatfield E, Rapson RL. Love, sex, and intimacy: Their psychology, biology, and history. New York: Harper Collins; 1993.
- 7 Regan PC, Berscheid E. Beliefs about the state, goals, and objects of sexual desire. *J Sex Marital Ther* 1996;22:110–20.
- 8 Spector IP, Carey MP, Steinberg L. The sexual desire inventory: Development, factor structure, and evidence of reliability. *J Sex Marital Ther* 1996;22:175–90.
- 9 Tiefer L. Historical, scientific, clinical, and feminist criticisms of the human sexual response cycle model. *Annu Rev Sex Res* 1991;2:1–23.
- 10 Burri AV, Schweitzer RD, O'Brien J. Correlates of female sexual functioning: Adult attachment and differentiation of self. *J Sex Med* 2014;11:2188–95.
- 11 Shaver PR, Hazan C. A biased overview of the study of love. *J Soc Pers Relat* 1988;5:473–501.
- 12 Bowen M. Family therapy in clinical practice. New York: Jason Aronson; 1978.
- 13 Matthews AK, Hughes TL, Tartaro J. Sexual behavior and sexual dysfunction in a community sample of lesbian and heterosexual women. In: Omoto AM, Kurtzman HS, eds. Sexual orientation and mental health: Examining identity and development in lesbian, gay, and bisexual people. Washington, DC: American Psychological Association; 2006:185–205.
- 14 Rosen R, Brown C, Heiman J, Leiblum S, Meston C, Shabsigh R, Ferguson D, D'Agostino R Jr. The Female Sexual Function Index (FSFI): A multidimensional self-report instrument for the assessment of female sexual function. *J Sex Marital Ther* 2000;26:191–208.
- 15 Brennan KA, Clark CL, Shaver PR. Self-report measurement of adult attachment: An integrative overview. In: Simpson JA, Rholes WS, eds. Attachment theory and close relationships. New York: Guilford Press; 1998:46–76.
- 16 Wei M, Russell DW, Mallinckrodt B, Vogel DL. The Experiences in Close Relationships Scale (ECR)-short form: Reliability, validity, and factor structure. *J Pers Assess* 2007;88:187–204.
- 17 Skowron EA, Friedlander ML. The differentiation of self inventory: Development and initial validation. *J Couns Psychol* 1998;45:235–46.

- 18 Skowron EA, Schmitt TA. Assessing interpersonal fusion: Reliability and validity of a new DSI Fusion with others subscale. *J Marital Fam Ther* 2003;29:209–22.
- 19 Kessler RC, Andrews G, Colpe LJ, Hiripi E, Mroczek DK, Normand SLT, Walters EE, Zaslavsky AM. Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychol Med* 2002;32:959–76.
- 20 Meston CM, Rellini AH, Heiman JR. Women's history of sexual abuse, their sexuality, and sexual self-schemas. *J Consult Clin Psychol* 2006;74:229–36.
- 21 Greene WH. *Econometric analysis*. 5th edition. New Jersey: Prentice Hall; 2003.
- 22 Trompeter SE, Bettencourt R, Barrett-Connor E. Sexual activity and satisfaction in healthy community-dwelling older women. *Am J Med* 2012;125:37–43.
- 23 Charles R. Is there any empirical support for Bowen's concepts of differentiation of self, triangulation, and fusion? *Am J Fam Ther* 2001;29:279–92.
- 24 Schnarch DM. *Constructing the sexual crucible: An integration of sexual and marital therapy*. New York: Norton; 1991.
- 25 Schnarch DM. *Intimacy and desire: Awaken the passion in your relationship*. New York: Beaufort Books; 2009.
- 26 Schnarch DM. *Passionate marriage: Sex, love, and intimacy in emotionally committed relationships*. New York: Norton; 1997.
- 27 van de Mortel TF. Faking it: Social desirability response bias in self-report research. *Aust J Adv Nurs* 2008;25:40–8.